

**REMARKS**

The final Office Action of October 10, 2007, has been received and reviewed.

Claims 17-20, 23-34, and 70-98 are currently pending and under consideration in the above-referenced application. Of these, claims 70-74, 76-86, and 88-98 have been rejected, while claims 17-20, and 23-34 have been allowed and claims 75 and 87 are drawn to allowable subject matter.

Reconsideration of the above-referenced application is respectfully requested.

**Rejections under 35 U.S.C. § 103(a)**

Claims 70-74, 76-86, and 88-98 have been rejected under 35 U.S.C. § 103(a) for being drawn to subject matter that is allegedly unpatentable over that taught in U.S. Patent 5,354,695 to Leedy et al. (hereinafter “Leedy”), in view of teachings from U.S. Patent 6,562,661 to Grigg (hereinafter “Grigg”) and the subject matter taught in U.S. Patent 6,524,881 to Tandy et al. (hereinafter “Tandy”).

There are several requirements in establishing a *prima facie* case of obviousness against the claims of a patent application. All of the limitations of the claim must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 985 (CCPA 1974); *see also* MPEP § 2143.03. Even then, a claim “is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR Int’l Co. v. Teleflex Inc.*, No. 04–1350, slip op. at 14 (U.S. April 30, 2007). The Office must also establish that one of ordinary skill in the art would have had a reasonable expectation of success that the purported modification or combination of reference teachings would have been successful. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). There must also be an explicit, articulated “reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements” in the manner claimed and provided the person of ordinary skill with a reasonable expectation that the combination or modification of the prior art would have been successful. *KSR*, slip op. at 5; *see also*, *KSR*, slip op. at 14. That reason must be found in the prior art, common knowledge, or derived from the nature of the problem itself, and not based on the Applicant’s disclosure. *DyStar Textilfarben GmbH & Co. Deutschland KG v. C. H. Patrick Co.*, 464 F.3d 1356, 1367

(Fed. Cir. 2006); M.P.E.P. § 2144. A mere conclusory statement that one of ordinary skill in the art would have been motivated to combine or modify reference teachings will not suffice. *KSR*, slip op. at 14.

It is respectfully submitted that there are at least two reasons that a *prima facie* case of obviousness has not been established against any of claims 70-74, 76-86, and 88-98.

Independent claim 70 is drawn to a process that requires “**molding** a support structure on an active surface of [a] semiconductor substrate...” (emphasis supplied).

In the process that has been disclosed in Leedy, a preformed structure is secured to an active surface of a substrate. Col. 8, lines 48-52; FIG. 1f. The teachings of Grigg are limited to use of so-called “stereolithography” processes to fabricate stiffeners on a tape substrate. The teachings of Tandy relate to a process by which a laser-markable tape is secured to the backside 12 of a wafer 10. Fig. 4A; col. 6, lines 44-49.

None of Leedy, Grigg, or Tandy teaches or suggests a process that includes molding.

Moreover, it is respectfully submitted that, without the benefit of hindsight that the above-referenced application provides the Office, there would have been no motivation for one of ordinary skill in the art to combine teachings from Leedy, Grigg, and Tandy in such a way as to render obvious the subject matter recited in independent claim 70, nor has the Office provided a convincing line of reasoning as to why one of ordinary skill in the art would have been motivated to combine teachings from these references.

It has been asserted that “all of the references pertain to making semiconductors...” Final Office Action, page 7. This assertion overlooks the fact that “making semiconductors” is a broad field that includes a large number of separate and distinct processes that employ different techniques. In combining teachings from Leedy, Grigg, and Tandy, the Office has attempted to combine teachings from separate fields within the general field of “making semiconductors”: thinning; the manufacture of flexible carrier substrates; and wafer marking, respectively.

Even overlooking the fact that the three cited references pertain to three different fields, it is respectfully submitted that one of ordinary skill in the art wouldn’t have been motivated to combine their teachings to develop the method recited in independent claim 70 since none of the cited references teaches or suggests “molding” a support structure.

Therefore, the teachings of Leedy, Grigg, and Tandy do not support a *prima facie* case of obviousness against the subject matter to which independent claim 70 is drawn. As such, under 35 U.S.C. § 103(a), the subject matter to which independent claim 70 is drawn is allowable over the teachings of Leedy, Grigg, and Tandy.

Claims 71-74 and 76-81 are each allowable, among other reasons, for depending directly or indirectly from independent claim 70, which is allowable.

The substrate thinning (*e.g.*, backgrinding) process of independent claim 82 includes securing a semiconductor substrate to a platen. An active surface of the semiconductor substrate must face the platen, with a support structure on the active surface abutting either the platen or a feature on the platen. Once the semiconductor substrate is secured to the platen in this manner, material is removed from its back side.

The process of Leedy includes the formation of a frame 18 while the substrate 10 is thinned. Col. 7, line 17, to col. 8, line 14; Figs. 1a and 1b. Thus, the frame 18, which is on the back side of the substrate 10 (col. 7, lines 51-52; Figs. 1a and 1b), could not abut a platen or a feature on the platen during thinning of the substrate 10. While Leedy teaches that a bonding frame or ring 19 may be secured to an active surface of the substrate 10, the teachings of Leedy are limited to securing the bonding frame or ring 19 to the active surface of the substrate 10 *after* the substrate 10 has been thinned. Col. 8, lines 48-52. Thus, Leedy does not teach or suggest removing material from the back side of a substrate while a support structure on the active surface of the substrate abuts a platen or a feature on a platen, as is required of the method of independent claim 82.

Grigg includes no teaching or suggestion that material may be removed from either side of the flexible substrate disclosed therein, let alone that material may be removed as a support structure on one surface of the flexible substrate abuts a platen or a feature on the platen.

The teachings of Tandy that relate to the removal of material from the back side of a semiconductor wafer are limited to securing a front side of the wafer 10 to a platen 56, which provide physical support for the wafer 10 as a grinding wheel 52 removes material from the back side of the wafer 10. Col. 5, lines 30-34; FIG. 2. Tandy does not teach or suggest that a support

structure of any type is secured to the front side of the wafer 10, between the wafer 10 and the platen 56, during the backgrinding process. Therefore, Tandy does not teach or suggest that material may be removed from the wafer 10 while a support structure on the front side of the wafer abuts the platen 56 or a feature on the platen 56, as required by independent claim 82.

Therefore, it is evident that none of Leedy, Grigg, or Tandy teaches or suggests the element of independent claim 82 requiring that a support structure on an active surface of a substrate abut a platen or a feature on the platen as material is removed from the back side of the substrate.

Moreover, since none of Leedy, Grigg, or Tandy identifies any shortcomings with the wafer thinning processes of Leedy and Tandy, and since the Office has not identified any problems with these processes, or with any other support for the assertion that one of ordinary skill in the art would have been motivated to support a wafer before material is removed from the wafer (*e.g.*, in the manner recited in independent claim 82), it is respectfully submitted that without the benefit of hindsight, one of ordinary skill in the art wouldn't have been motivated to combine teachings from Leedy, Grigg, and Tandy in the manner that has been asserted by the Office.

In view of the foregoing, it is respectfully submitted that the Office has not established a *prima facie* case of obviousness against the subject matter recited in independent claim 82, or in any of claims 83-86 or 88-98 depending therefrom, as would be required to maintain the 35 U.S.C. § 103(a) rejections of these claims.

It is respectfully requested that the 35 U.S.C. § 103(a) rejections of claims 70-74, 76-86, and 88-98 be withdrawn, and that each of these claims be allowed.

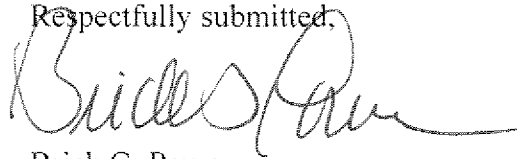
#### **Allowable Subject Matter**

The allowance of claims 17-20 and 23-34 and the indication that claims 75 and 87 recite allowable subject matter are gratefully acknowledged. Claims 75 and 87 have not been amended into independent form, as the claims from which they depend are believed to be allowable.

**CONCLUSION**

It is respectfully submitted that each of claims 70-74, 76-86, and 88-98 is allowable. An early notice of the allowability of each of these claims is respectfully solicited, as is an indication that the above-referenced application has been passed for issuance. If any issues preventing allowance of the above-referenced application remain which might be resolved by way of a telephone conference, the Office is kindly invited to contact the undersigned attorney.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Brick G. Power", written over the typed name.

Brick G. Power  
Registration No. 38,581  
Attorney for Applicants  
TRASKBRITT, PC  
P.O. Box 2550  
Salt Lake City, Utah 84110-2550  
Telephone: 801-532-1922

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BGP/dlm:ec

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